

Appendix E2a.ii (1) – Restoration Plans and TMDLs (Restoration Credits)

Harford County, MD Department of Public Works
Watershed Protection and Restoration
Completed Capital Improvement Projects



Barry Glassman
County Executive

Emmord Stream Restoration (WP000085)

Design Initiated - Jun 2017 Construction Completed - Oct 2020

Near intersection of Trimble Road and Fort Hoyle Road (ADC (2012) 4583H5)

Stream restoration

Design	Construction	Total Cost	Grant	Credits	Cost per Impervious Acre
\$168,478 (22%)	\$580,973 (78%)	\$749,451	\$0 (0%)	58.50 acres	\$12,811

CIPid	Credits Type	Drainage Area (acres) / Impervious	Project Size	Credits (acres)	Credit Value
CIP0118	Stream Restoration (Protocols)		975	58.50	Based on loads from protocols



MEMORANDUM

700 East Pratt Street, Suite 500
Baltimore, MD 21202
Phone 410.728.2900
Fax 410.728.2834
www.rkk.com

Date: 06/08/2021
To: Christine Buckley, Harford County DPW, Watershed Protection and Restoration
From: Danielle Hankins, RK&K
CC: Brittany Ayers, RK&K; Lucy Noya, RK&K
Re: Review and Verification of Impervious Acre Credits and Load Reduction Calculations

Dear Ms. Buckley,

As requested, RK&K has reviewed the documents you provided for the following one (1) projects completing construction in FY21:

- Emmord Branch Stream Restoration

The review was completed to verify the impervious acre credit and load reduction calculations associated with the completed restoration work as presented in the documentation provided. RK&K calculations were completed following the guidelines presented in "Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits" (MDE, June 2020). Details regarding credit calculations are provided below. Details regarding each project follow.

Emmord Branch Stream Restoration

Summary: The restoration completed for Emmord Branch Stream Restoration include 3,258 linear feet of stream restoration. Impervious area credit was calculated using Stream Restoration Protocols 1 and 2.

Facility	Impervious Acre Credit (acres)	TN Annual Load Reduction (lbs.)	TP Annual Load Reduction (lbs.)	TSS Annual Load Reduction (tons)
Stream Restoration	58.48	495	216	206

Should you have any questions please contact me at (410) 462-9160 at your earliest convenience.

Very truly yours,
RUMMEL, KLEPPER & KAHL, LLP

Danielle Hankins



MEMORANDUM

700 East Pratt Street, Suite 500
Baltimore, MD 21202
Phone 410.728.2900
Fax 410.728.2834
www.rkk.com

Date: 12/18/2020 – Updated 12/16/2021
To: Christine Buckley, Harford County DPW, Watershed Protection and Restoration
From: Danielle Hankins, RK&K
CC: Brittany Ayers, RK&K; Lucy Noya, RK&K
Re: Review and Verification of Impervious Acre Credits and Load Reduction Calculations

Dear Ms. Buckley,

As requested, RK&K has reviewed the documents you provided for the following six (6) projects completing construction in FY20:

- Annie's Playground - Winter's Run Tributaries Stream Restoration
- Barrington and Rollins Court Stream Restorations and Stormwater Management
- Courthouse Micro-Bioretenion
- Mariner Point Park Tree Planting Site
- Wakefield Plumtree Run Stream Restoration
- Willoughby Stream Restoration and Stormwater Management

The review was completed to verify the impervious acre credit and load reduction calculations associated with the completed restoration work as presented in the documentation provided. RK&K calculations were completed following the guidelines presented in "Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits" (MDE, August 2014, December 2019 and June 2020).

Annie's Playground - Winter's Run Tributaries

Summary: The restoration completed for Winter's Run Tributaries include 3,258 linear feet of stream restoration. Impervious area credit was calculated based on the planning rate of 0.03 acres of credit per linear foot of restoration.

Facility	Impervious Acre Credit (acres)	TN Annual Load Reduction (lbs.)	TP Annual Load Reduction (lbs.)	TSS Annual Load Reduction (tons)
Stream Restoration	97.74	244.35	221.54	403.99

Barrington Place and Rollins Court

Summary: The restoration completed for Barrington Place and Rollins Court included two stream restorations, two new stormwater management ponds, a new bioretention facility, two SWM wetlands, and two SPSCs. The stream restorations included 2,512 linear feet of restoration. Impervious area credit for stream restorations and SPSCs was calculated based on the planning rate of 0.03 acres of credit per linear foot of restoration.

Facility	Impervious Acre Credit (acres)	TN Annual Load Reduction (lbs.)	TP Annual Load Reduction (lbs.)	TSS Annual Load Reduction (tons)
Barrington Place Stream Restoration	21.00	52.50	47.60	86.80
SWM Pond #1	6.19	57.32	4.40	2.25
Bioretention	0.60	15.59	1.59	0.45
Barrington SWM Wetland	0.43	6.94	0.96	0.31
Rollins Court Stream Restoration	54.37	135.92	123.24	224.73
SWM Pond #2	0.99	31.88	2.56	0.64
Rollins SWM Wetland	1.60	17.41	1.92	0.56
Rollins Court SPSC	7.26	8.58	0.95	0.28

Courthouse

Summary: The restoration completed for the Courthouse includes the creation of a new micro-bioretention facility.

Facility	Impervious Acre Credit (acres)	Green Infrastructure Credit (acres)	TN Annual Load Reduction (lbs.)	TP Annual Load Reduction (lbs.)	TSS Annual Load Reduction (tons)
Micro-Bioretention	0.48	0.17	2.57	0.43	0.14

Mariner Point Park

Summary: The restoration completed for Mariner Point park includes a tree planting site with 102 newly planted trees.

Facility	Impervious Acre Credit (acres)	TN Annual Load Reduction (lbs.)	TP Annual Load Reduction (lbs.)	TSS Annual Load Reduction (lbs.)
Tree Planting	0.29	3.24	0.52	83.64

Wakefield – Plumtree Run

Summary: The restoration completed for Plumtree Run include 286 linear feet of stream restoration. Impervious area credit was calculated based on the planning rate of 0.03 acres of credit per linear foot of restoration.

Facility	Impervious Acre Credit (acres)	TN Annual Load Reduction (lbs.)	TP Annual Load Reduction (lbs.)	TSS Annual Load Reduction (tons)
Stream Restoration	8.58	21.45	19.45	35.46

Willoughby Beach Road Retrofits and Stream

Summary: The restoration completed for Willoughby Beach Road include 2,028 linear feet of stream restoration, two stormwater management pond retrofits, a SWM wetland, and two SPSCs at outfalls C and H. Impervious area credit for SPSCs was calculated based on the planning rate of 0.03 acres of credit per linear foot of restoration. Impervious area credit for the stream restoration was calculated using Protocols 1 and 2 for stream restoration.

Facility	Impervious Acre Credit (acres)	TN Annual Load Reduction (lbs.)	TP Annual Load Reduction (lbs.)	TSS Annual Load Reduction (tons)
Stream Restoration	143.26	1363.00	517.00	493.00
SWM Pond #1	3.25	50.88	4.84	1.34
SWM Pond #2	2.22	33.74	3.24	0.89
SPSC Outfall H	5.32	4.60	0.44	0.12
Wetland	6.60	141.09	14.70	4.17
SPSC Outfall C	2.94	20.78	0.77	0.06

Should you have any questions please contact me at (410) 462-9160 at your earliest convenience.

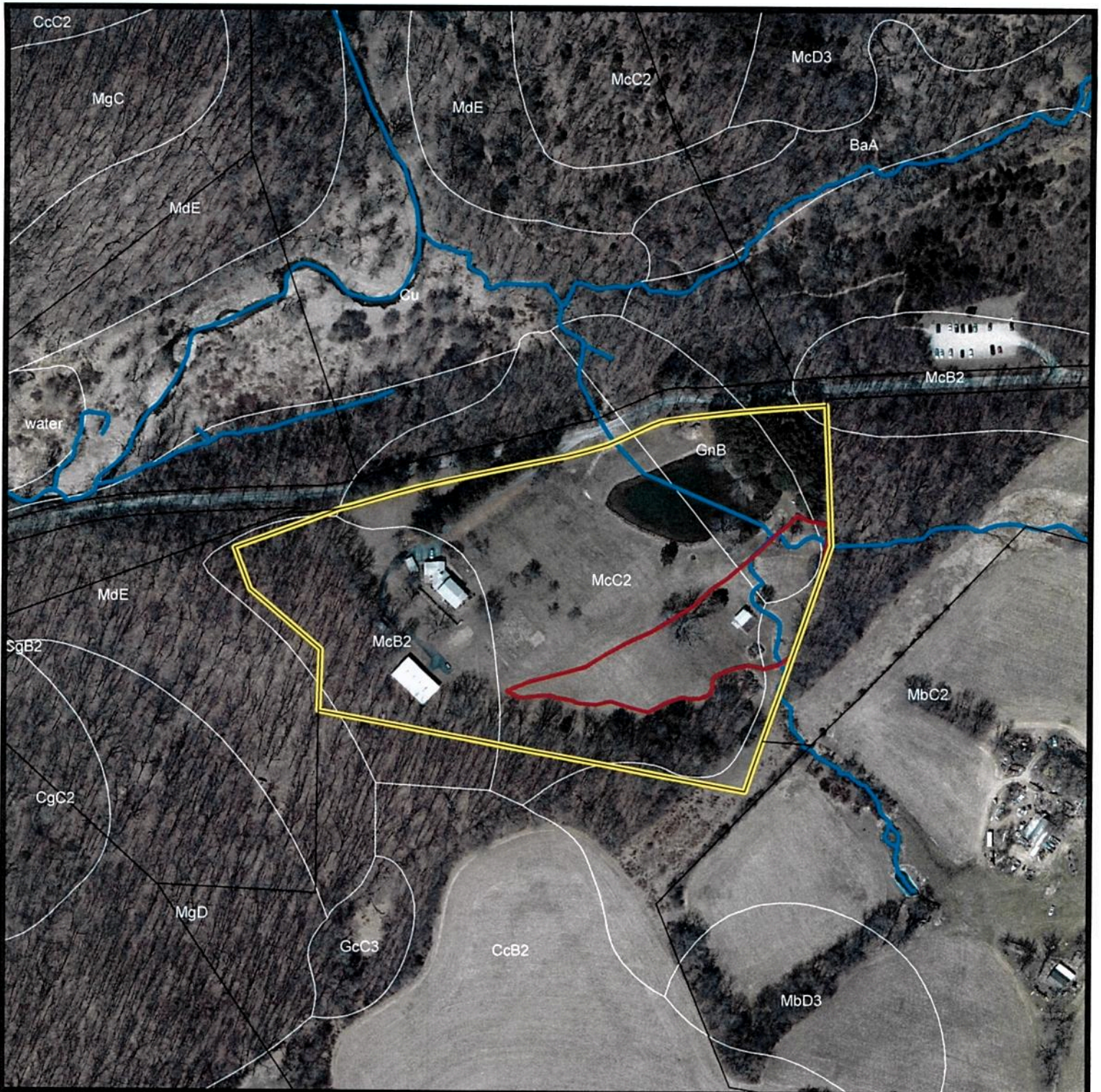
Very truly yours,
RUMMEL, KLEPPER & KAHL, LLP



Danielle Hankins

Existing Alliance for the Chesapeake Bay Tree Planting Sites

Landowner Name	Location	Acres	Year Planted	BMP Type	BMP Credit/Ac (EIA_f)	Total EIA Credit
Barbara Lukasik	4555 Conowingo Road, Darlington, MD	0.6	2019	Urban Tree Canopy	1.1	0.66
Barry Stansbury	3874 Peach Orchard Road, Whiteford, MD 21160	1.5	2019	Forest Planting	1.1	1.65
Cynthia Runyon	3151 Martindale Lane, Forest Hill, MD	0.7	2019	Urban Tree Canopy	1.1	0.77
David Kahl	2325 Amoss Mill Road, Pylesville, MD	0.8	2019	Urban Tree Canopy	1.1	0.88
David Sedney	610 Old Fallston Road, Fallston MD	1.5	2019	Forest Planting	1.1	1.65
Greg Edwards	1341 Ryan Road, Fallston MD 21407	0.2	2019	Urban Tree Canopy	0.38	0.08
Henry Harrison	1209 Whitaker Mill Rd Joppa MD 21085	0.5	2019	Urban Tree Canopy	1.1	0.55
Joelle Pouliot	1339 Ryan Road, Fallston MD 21407	0.4	2019	Urban Tree Canopy	0.38	0.15
Kirsti Tepper	2320 Edwards lane, Bel Air, MD 21015	1.5	2019	Forest Planting	1.1	1.65
Michael Houser (Chad)	663 Cherry Hill Road, Street, MD	1.9	2019	Forest Planting	1.1	2.09
Mike Skowron	619 Glenville Road, Churchville, MD	1.5	2019	Forest Planting	1.1	1.65
St Mark's	2407 Laurel Brook Rd, Fallston, MD 21047	1.5	2019	Forest Planting	1.1	1.65
Cindy Malloy	1055 Falling Branch Road, Pylesville, MD	1.7	2020	Forest Planting	1.1	1.87
Frank Schofield	1108 Thompson Way, Street, MD	2.7	2020	Forest Planting	1.1	2.97
Jerry Preston	4716 Clermont Mill Road, Pylesville, MD 21132	7	2020	Forest Planting	1.1	7.70
Anthony Pecoriello	2138 Buell Drive Forest Hill, Fallston, MD	1.5	2021	Forest Planting	1.1	1.65
Berthenia Crocker	1326 Somerville Road, Bel Air MD 21015	1	2021	Forest Planting	1.1	1.10
Bruce Kinzinger	338 Quaker Bottom Road, Havre de Grace, MD	3	2021	Forest Planting	1.1	3.30
Chris Murk	3400 Lord Baltimore Way, Monkton, MD	2	2021	Forest Planting	1.1	2.20
Eric Smith	3928 Ady Road Pylesville, MD	3	2021	Forest Planting	1.1	3.30
Gary Murk	4062 Madonna Road Jarrettsville, MD	0.5	2021	Urban Tree Canopy	1.1	0.55
Rebecca Murk	4068 Madonna Road, Jarrettsville, MD	1	2021	Forest Planting	1.1	1.10
Varnarnsdale, Missy	2410 Island Branch Road, Pylesville, MD 21132	1	2021	Forest Planting	1.1	1.10
Total Planting Acres:		37			Total EIA Credit:	40.27



Legend

- Property Boundary
- Streams
- Planting area
- Soil Type

1 inch = 250 feet

Healthy Forest Healthy Waters Map
for Cindy Siejack

County: Harford

Planting Acres: 1.7

Scale: 1:3,000

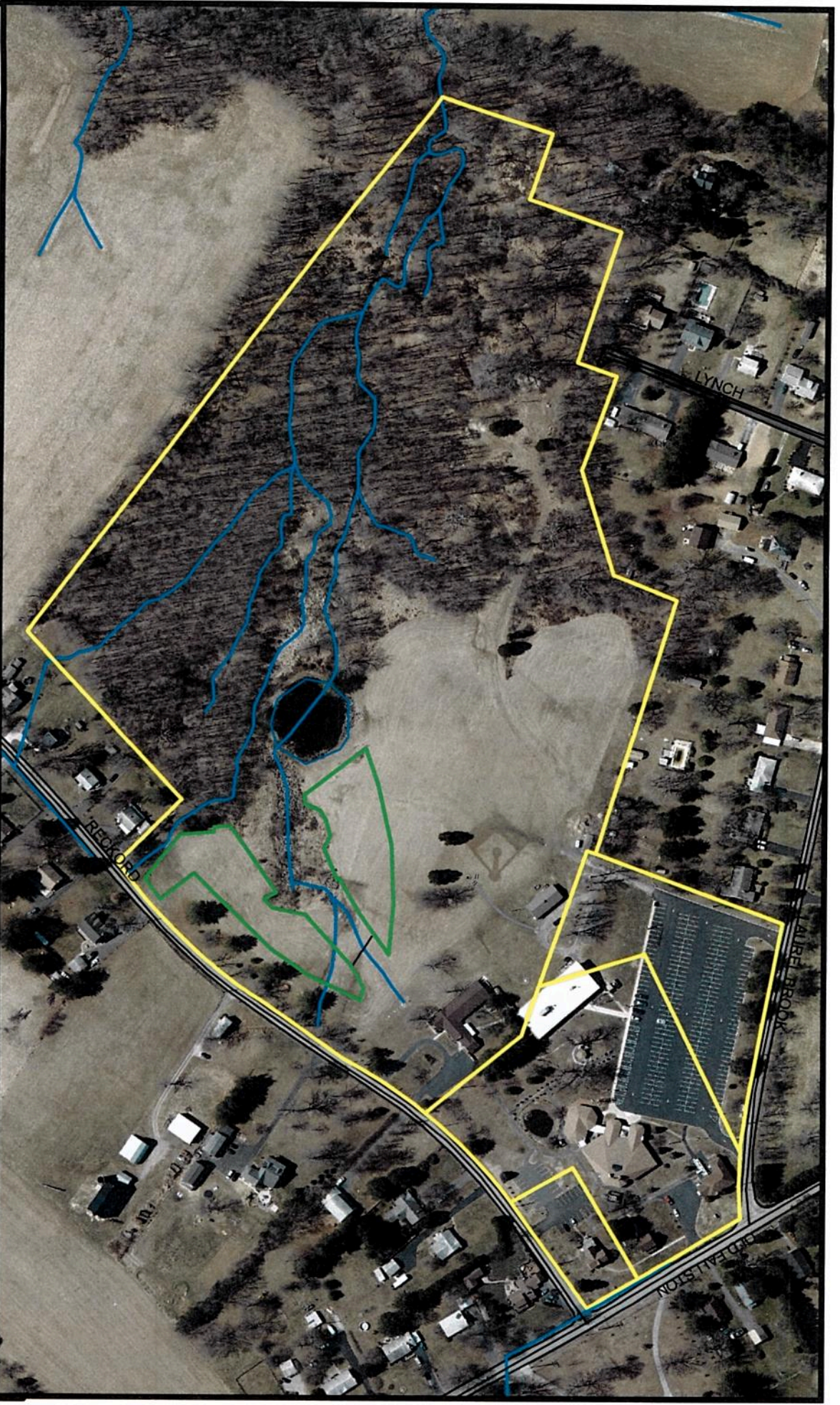
Prepared by: A. Amoroso

Date: 11/22/2019

0 80 160 320 480 640
Feet




This map is for planning purposes only.
This map is not a boundary survey



Legend

 Tree Planting to Buffer Creek Headwaters  Waterways

 St._Mark_Property

 Roads

250 0 250 500 750
Feet
This map is for planning purposes only.
This map is not a boundary survey
1 inch = 250 feet



Turf to Trees Planting Map

for

St. Mark Catholic Church

County: Harford

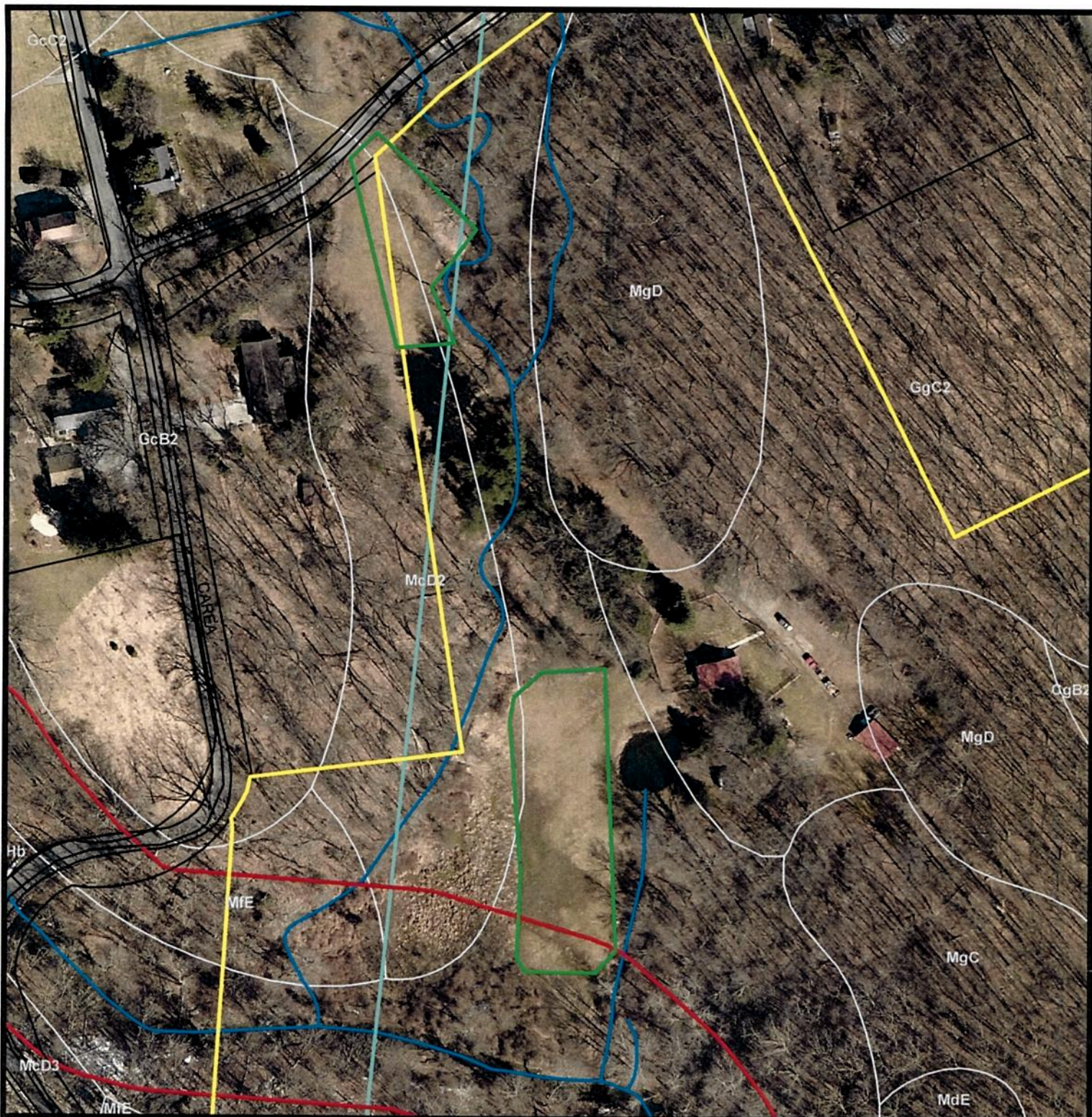
Planting Acres: 1.5

Scale: 1:3,000

Prepared by: Frank M. Lopez

Date: 8/5/2019





Legend

- | | | |
|--|--|--|
|  Delizia_Kahl_Property |  Forests of Recognized Importance |  Planting Sites |
|  Roads |  Natural Heritage Site | |
|  Waterways | | |

125 0 125 250

 Feet

This map is for planning purposes only.
 This map is not a boundary survey 1 inch = 125 feet



Forest Stewardship Map for

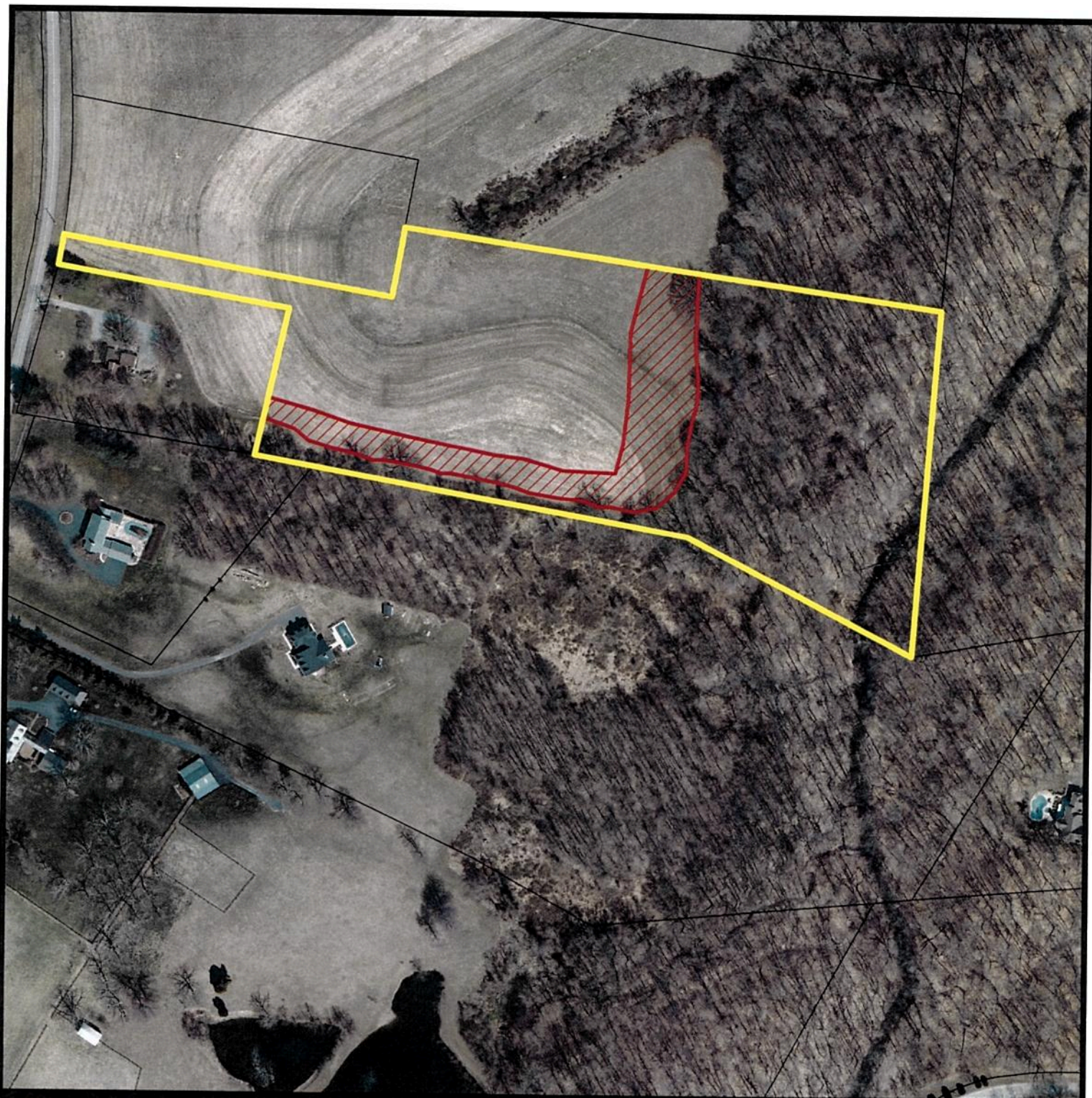
Doris M. Delizia
 David R. Kahl
 County: Harford

Planting Acres: 0.8
 Prepared by: Frank M. Lopez
 Date: 11/21/2019





MARYLAND
 DEPARTMENT OF
 NATURAL RESOURCES





Legend

-  Property Boundary
-  Planting site

1 inch = 229 feet

Forest Stewardship Map
for Mike Skowron

County: Harford

Woodland Acres:

Scale: 1:2,750

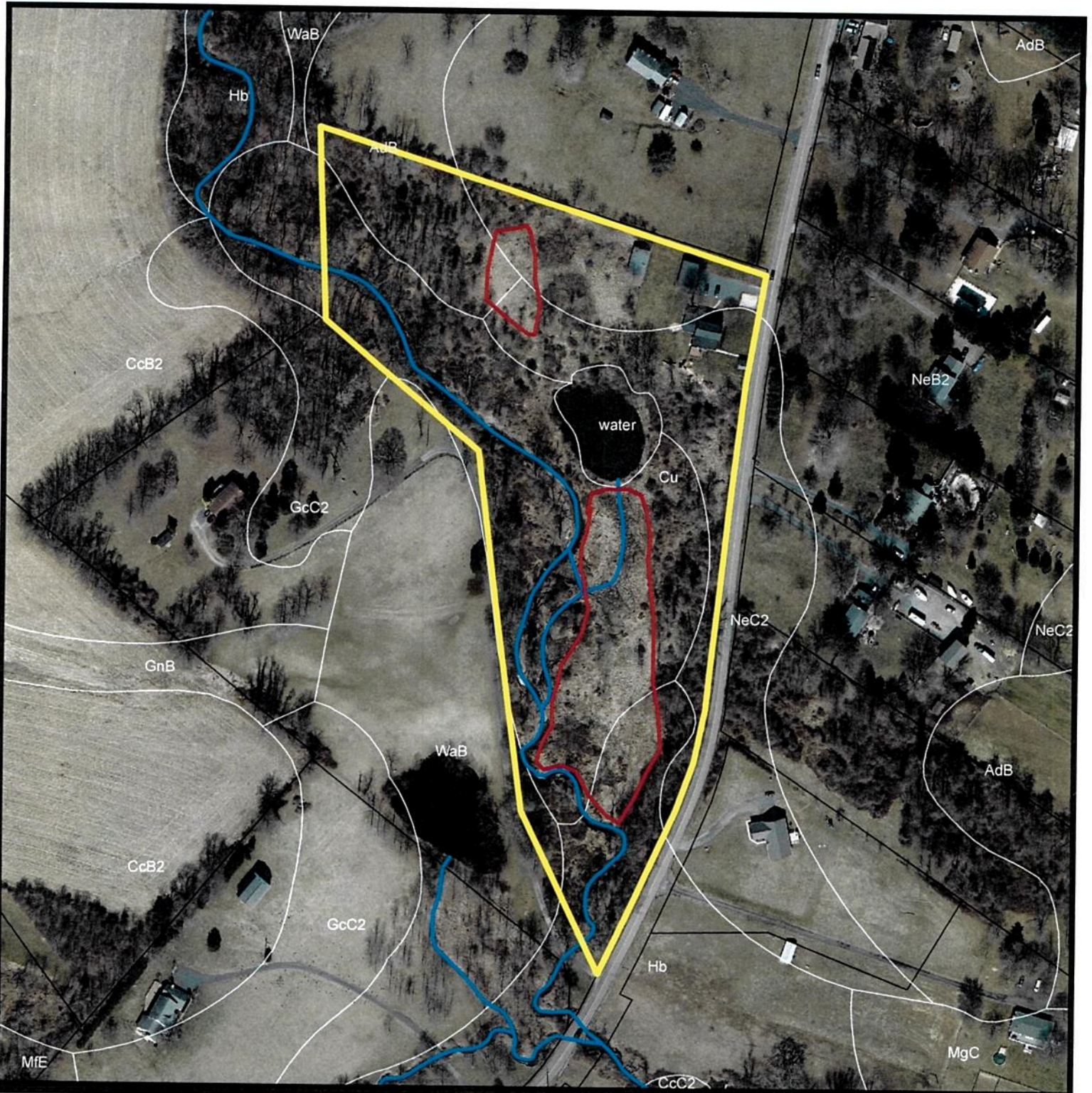
Prepared by: A. Amoruso

Date: 8/16/2019

0 75 150 300 450 600
Feet

This map is for planning purposes only.
This map is not a boundary survey





Legend

- Boundary
- Hydrology Lines
- Planting
- soils

0 70 140 280 420 560 Feet

This map is for planning purposes only.
This map is not a boundary survey

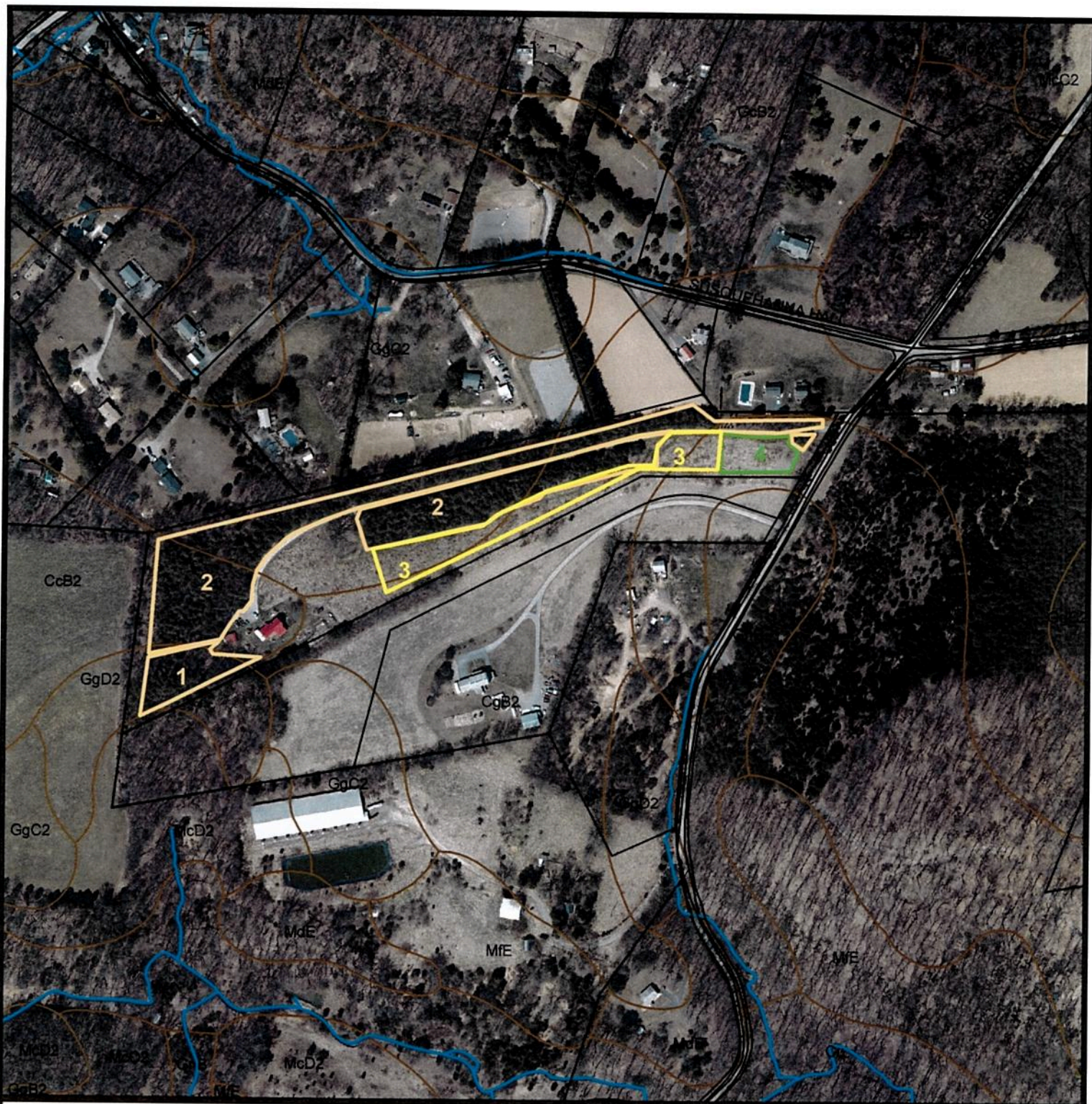
1 inch = 208 feet

Healthy Forest Healthy Waters Map
for Michael and Christie Tepper





County: Harford
Planting Acres: 1.5
Scale: 1:2,500

Prepared by: A. Amoruso
Date: 11/22/2019





Legend

- | | | | |
|---|------------------------------|---|------------------|
|  | Stansbury_Schaeffer_Property |  | Waterways |
|  | Roads | 1 | Management units |
|  | Soils | | |

350 0 350 700
Feet

This map is for planning purposes only.

This map is not a boundary survey 1 inch = 350 feet



Forest Stewardship Map
for

Barry R. Stansbury
Judy A. Schaeffer

County: Harford

Woodland Acres: 9.45

Prepared by: Frank M. Lopez

Date: 11/22/2019





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Legend

-  Property Boundary
-  Planting

1 inch = 83 feet

Forest Stewardship Map
for Henry Harrison

County: Harford

Woodland Acres:

Scale: 1:1,000

Prepared by: A. Amoruso

Date: 8/16/2019



0 25 50 100 150 200 Feet

This map is for planning purposes only.
This map is not a boundary survey





Legend

-  Property Boundary
-  Planting Area
- Soil Types

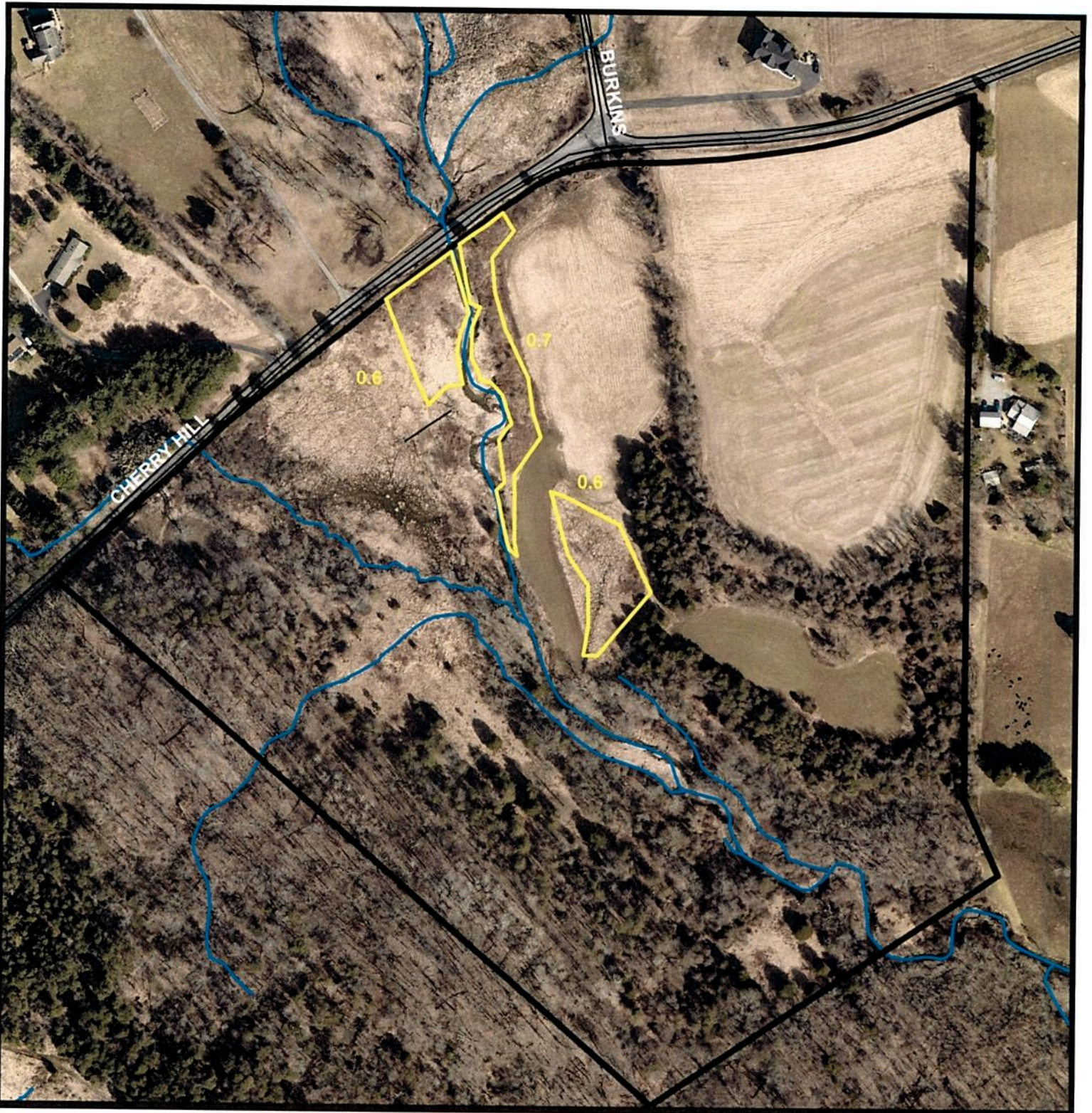


This map is for planning purposes only.
This map is not a boundary survey



Forest Stewardship Map
for
Lester and Barbara Lukasik
County: Harford
Planting Acres: 0.6
Scale: 1"=165'
Prepared by: T. Frederick
Date: 8/27/2019





Legend

- | | |
|--|---|
|  Houser Property |  Roads |
|  Houser Planting Sites |  Waterways |



This map is for planning purposes only.
This map is not a boundary survey

1 inch = 250 feet



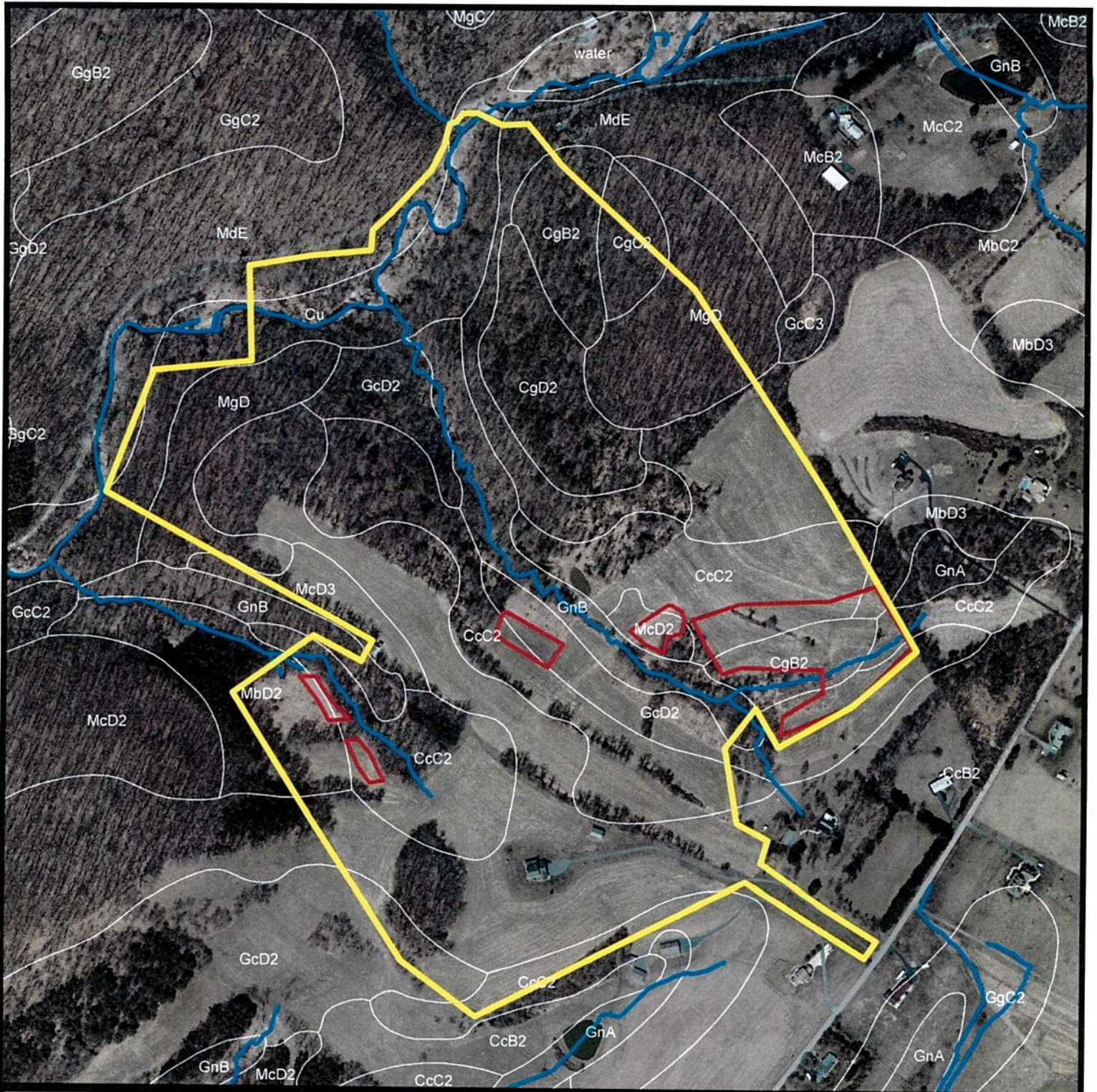
Healthy Forests, Healthy Waters Mowing Map for

Michael L. Houser
Dana L. Houser
County: Harford
Planting Acres: 1.9
Prepared by: Frank M. Lopez
Date: 9/23/2019



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Legend

- Property Boundary
- Planting
- Streams
- Soil Type

1 inch = 458 feet

Healthy Forest Healthy Waters Map
for Jerry Preston

County: Harford

Planting Acres: 7

Scale: 1:5,500

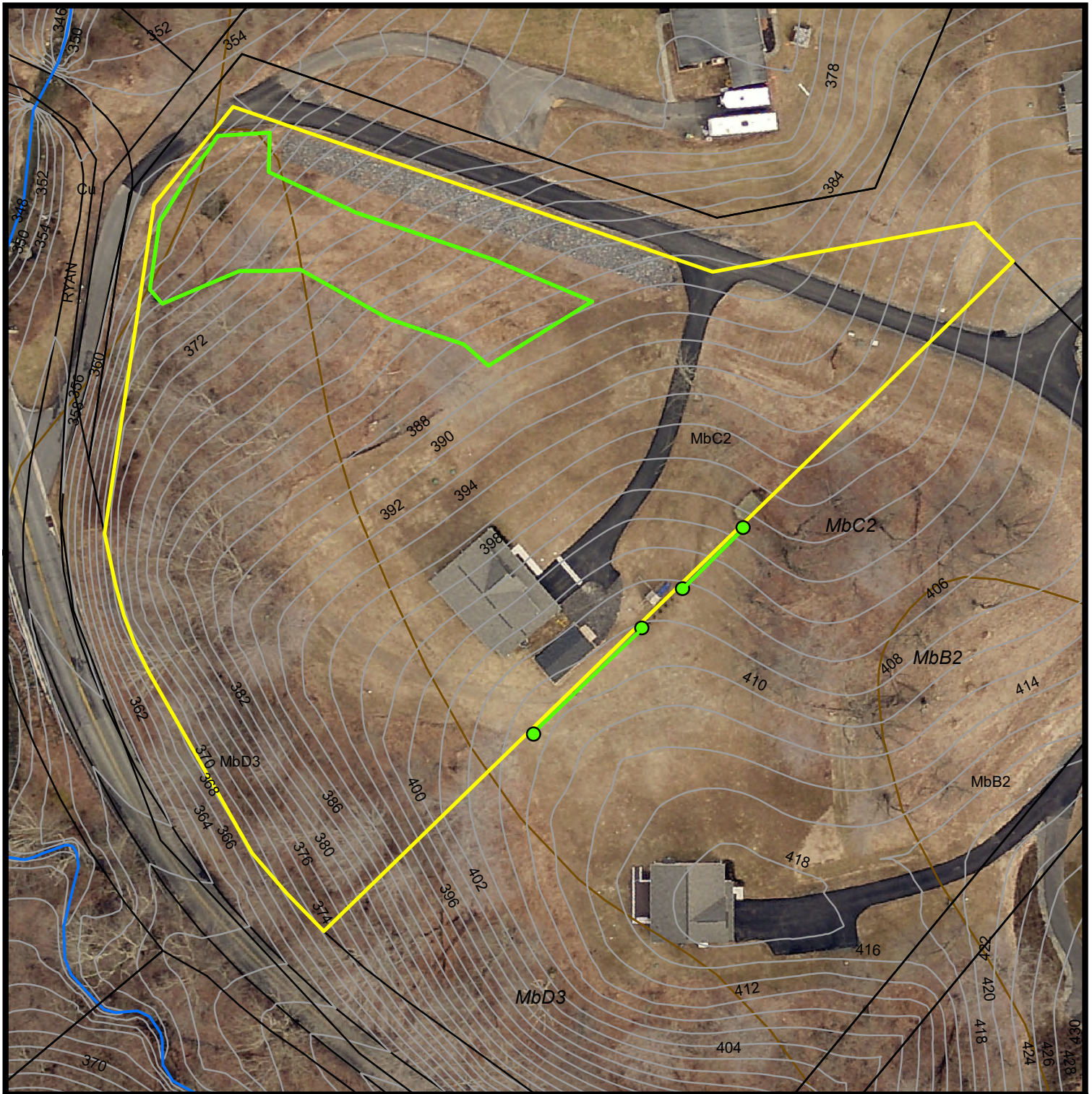
Prepared by: A. Amoruso

Date: 11/22/2019

0 155 310 620 930 1,240 Feet

This map is for planning purposes only.
This map is not a boundary survey





Legend

- Edwards Planting Site
- Edwards_Property_Boundary
- Roads
- Waterways
- Soils
- Contours

66 0 66 132 Feet

This map is for planning purposes only. 1 inch = 66 feet
This map is not a boundary survey



Forest Stewardship Map for

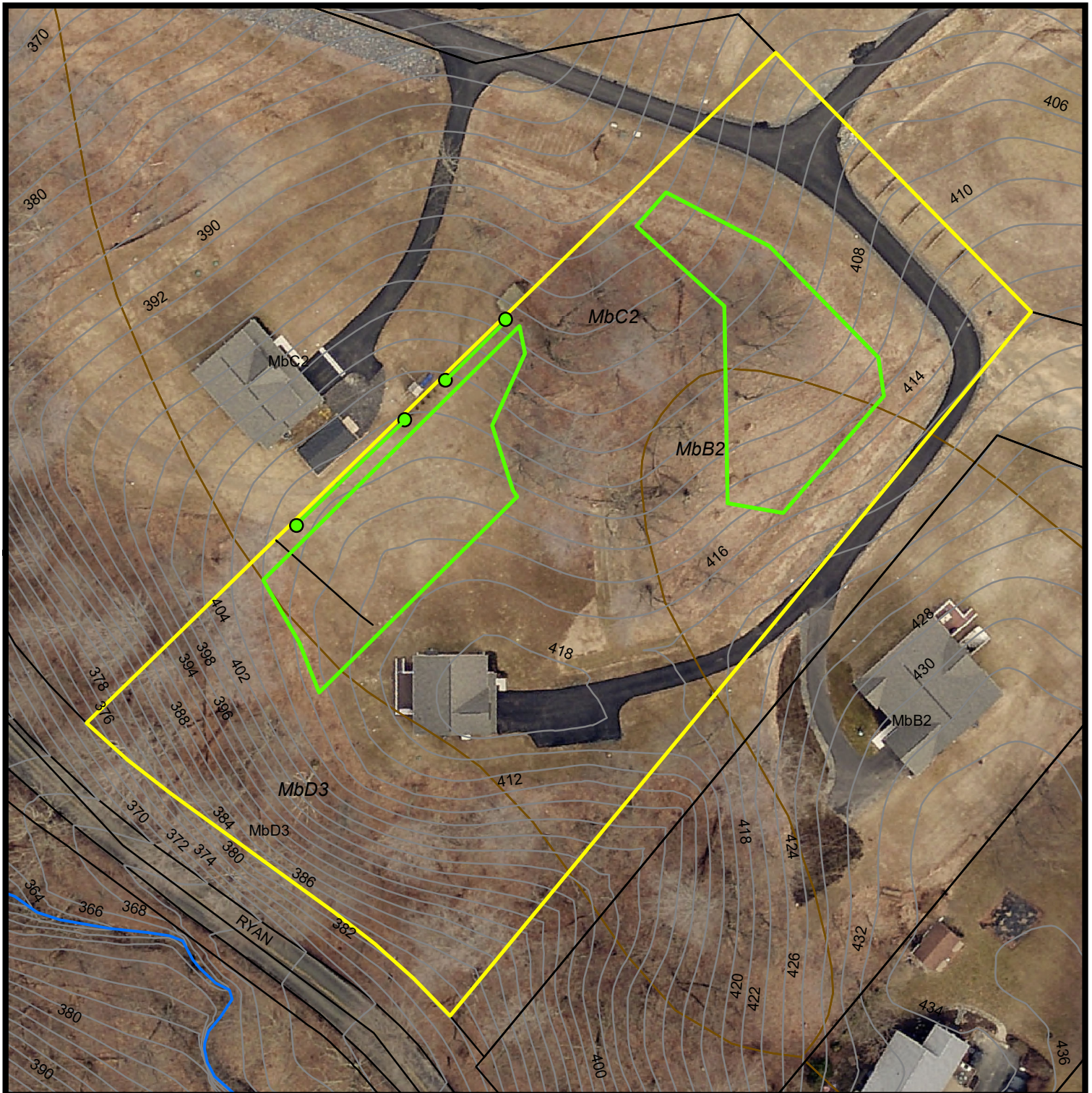
Gregory B. Edwards
Andrea P. Edwards
County: Harford
Planting Acres: 0.2
Scale: 1:792

Prepared by: Frank M. Lopez
Date: 11/22/2019



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NATURAL RESOURCES



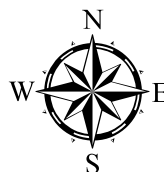


Legend

- Pouliot_Planting_Sites
- Pouliot_Property_Boundary_2019
- Roads
- Waterways
- Soils
- Contours



This map is for planning purposes only. 1 inch = 66 feet
This map is not a boundary survey









Forest Stewardship Map
for
Joelle Pouliot & Dan McLennan
Andrea P. Edwards
County: Harford
Planting Acres: 0.4
Scale: 1:792
Prepared by: Frank M. Lopez
Date: 11/22/2019

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NATURAL RESOURCES





Legend

- | | | | |
|--|----------------------|---|-----------|
|  | Runyon_Property |  | Waterways |
|  | Runyon_Planting_Site |  | Soils |
|  | Roads |  | Contours |

100 0 100 200
Feet

This map is for planning purposes only. 1 inch = 100 feet
This map is not a boundary survey



Healthy Forests, Healthy Waters Map
for

Cynthia A. Runyon

County: Harford

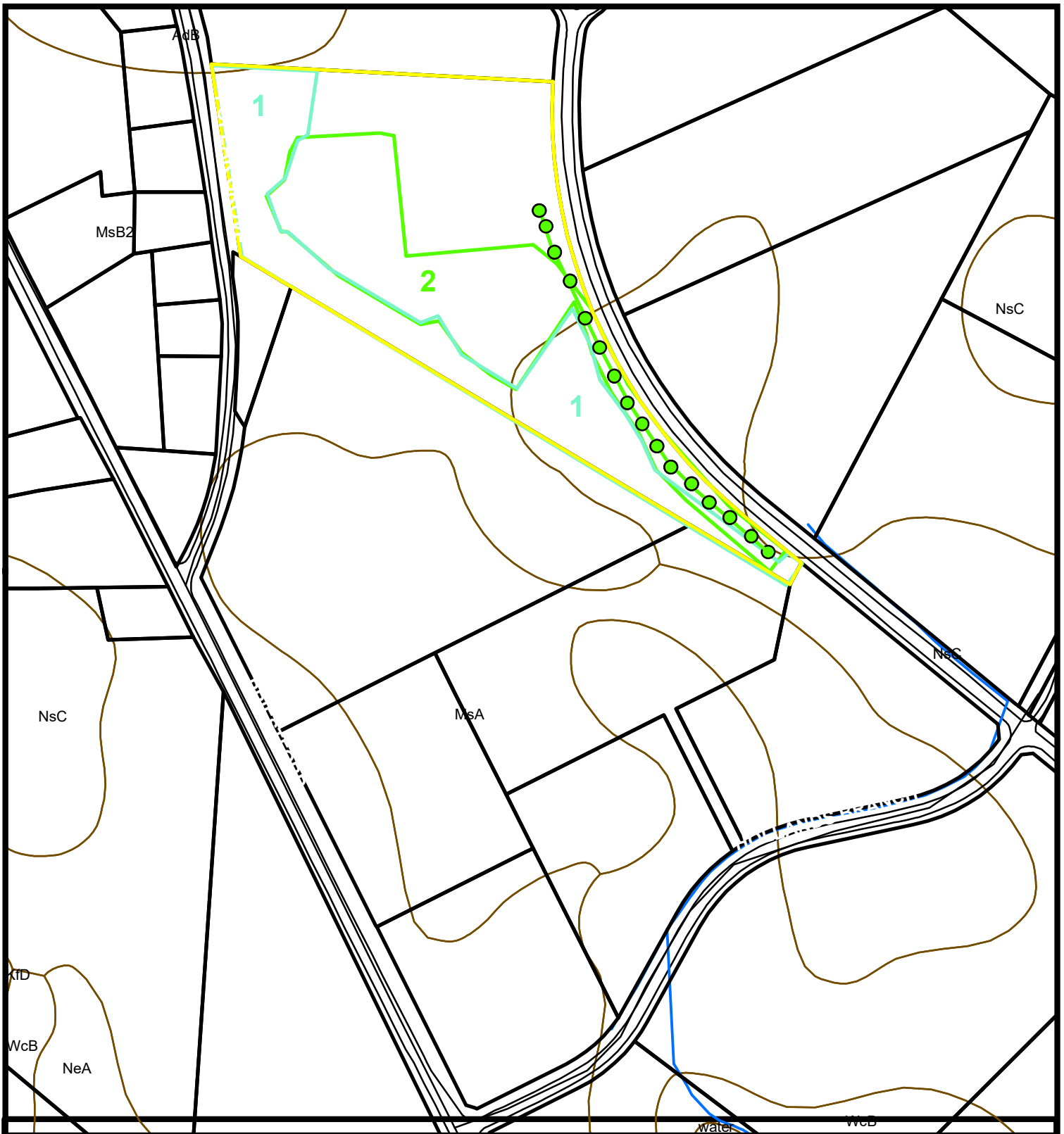
Planting Acres: 0.7

Scale: 1:1,200







Prepared by: Frank M. Lopez

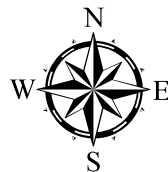
Date: 11/22/2019





Legend

- | | |
|--|---|
|  Schofield_Property |  Roads |
|  Schofield_Planting_Site |  Waterways |
|  Schofield_Existing_Forest |  Soils |



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1 inch = 250 feet

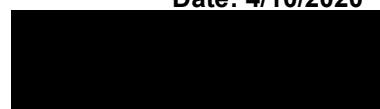
**Healthy Forests, Healthy Waters Mowing Map
for**

**John F. Schofield, Jr. & Chandra J. Schofield
County: Harford**

Planting Acres: 2.7, Tottal Wooded Acres: 5.8

Prepared by: Frank M. Lopez

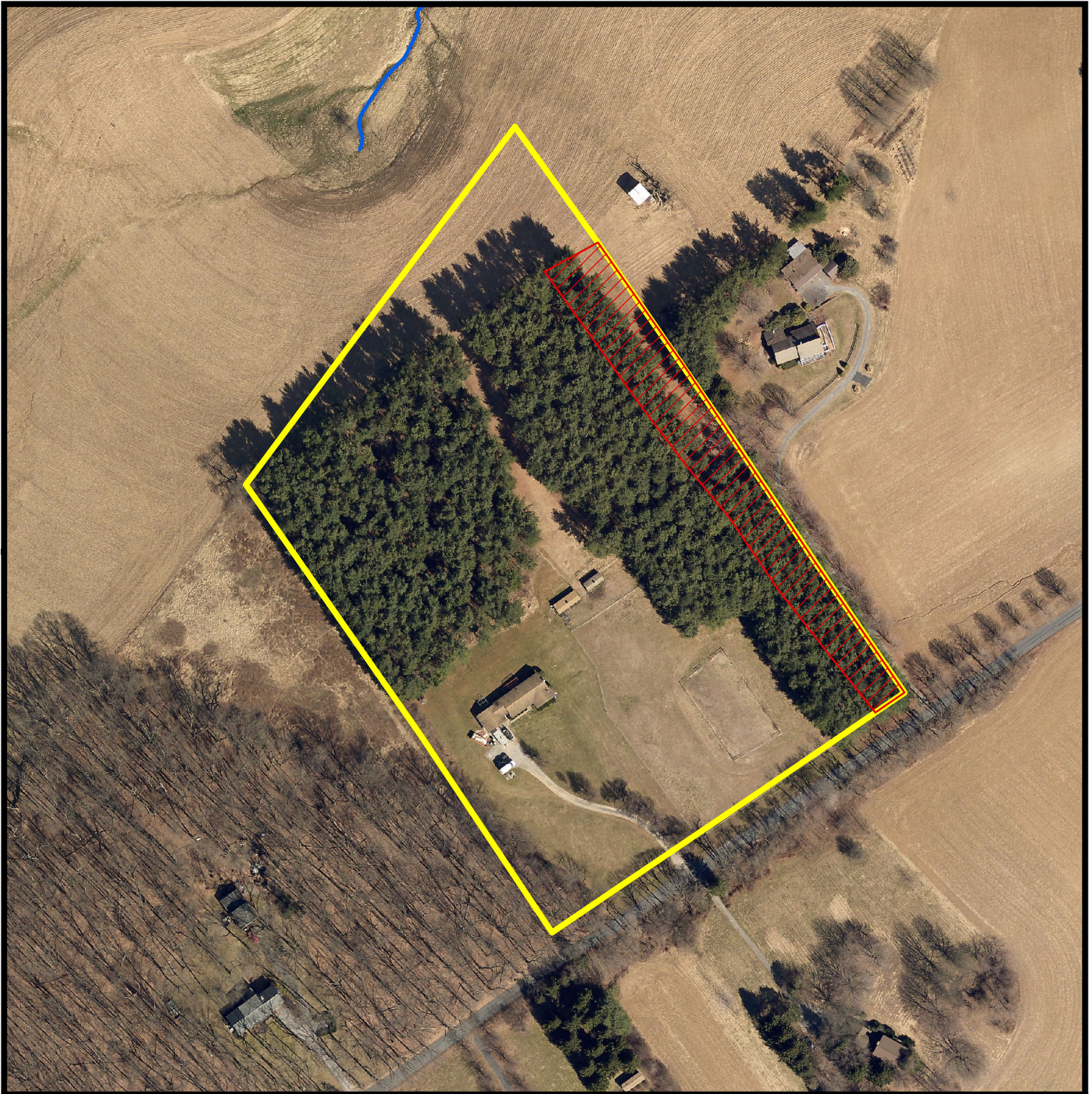
Date: 4/10/2020






David and Diana Sedney: 610 Old Fallston Road, Fallston MD

39.504005, -76.404439





Legend

-  Property Boundary  Streams
 Planting Boundary

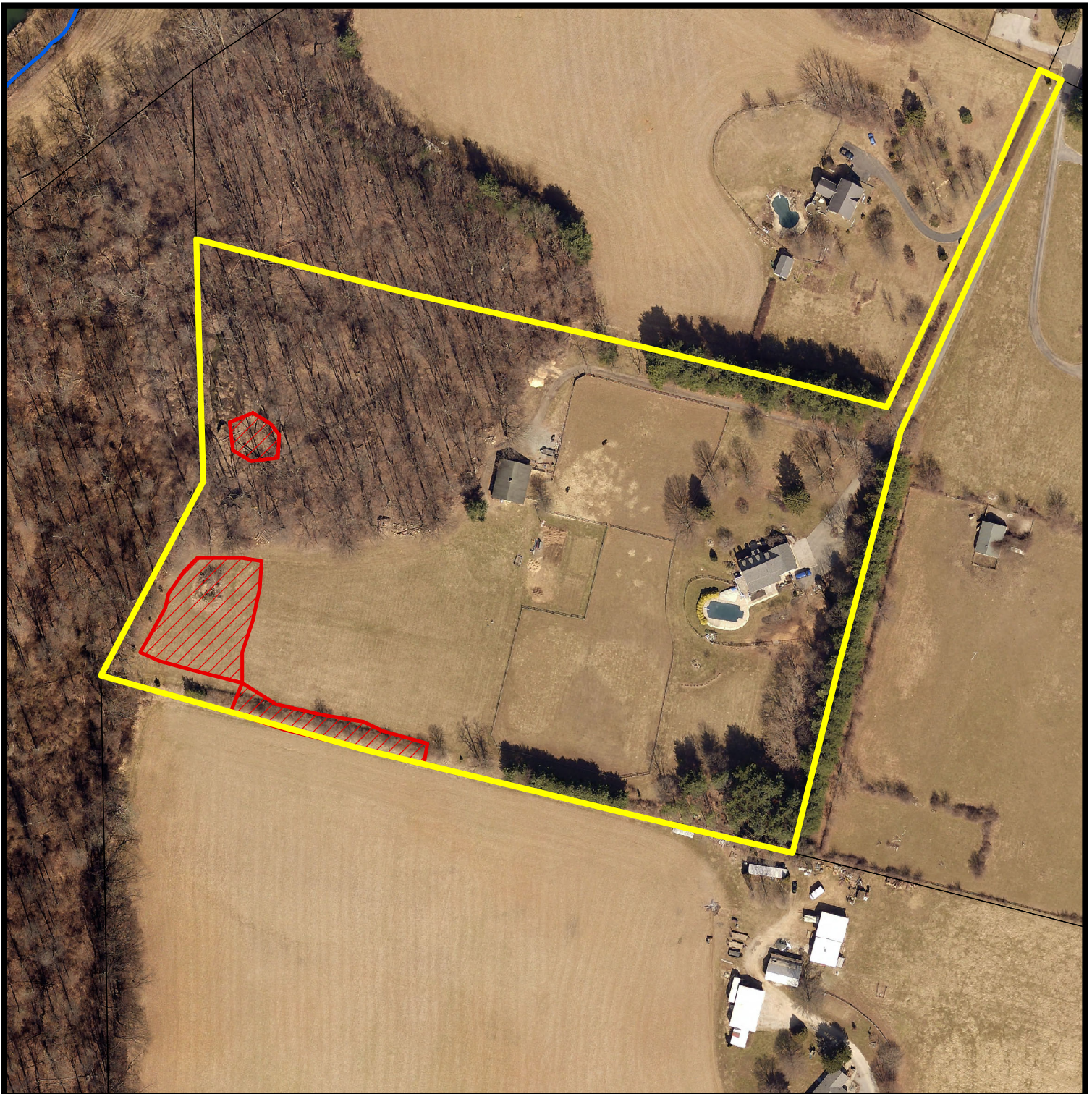
0 55 110 220 330 440 Feet

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This map is not a boundary survey

1 inch = 175 feet



Forest Stewardship Map
for
Missy Varnarsdale
County: Harford
Planting Acres: 1
Scale: 1:2,100
Prepared by: A. Amoruso
Date: 1/8/2021



Legend

-  Property Boundary  Planting Boundary
 Streams

0 55 110 220 330 440 Feet

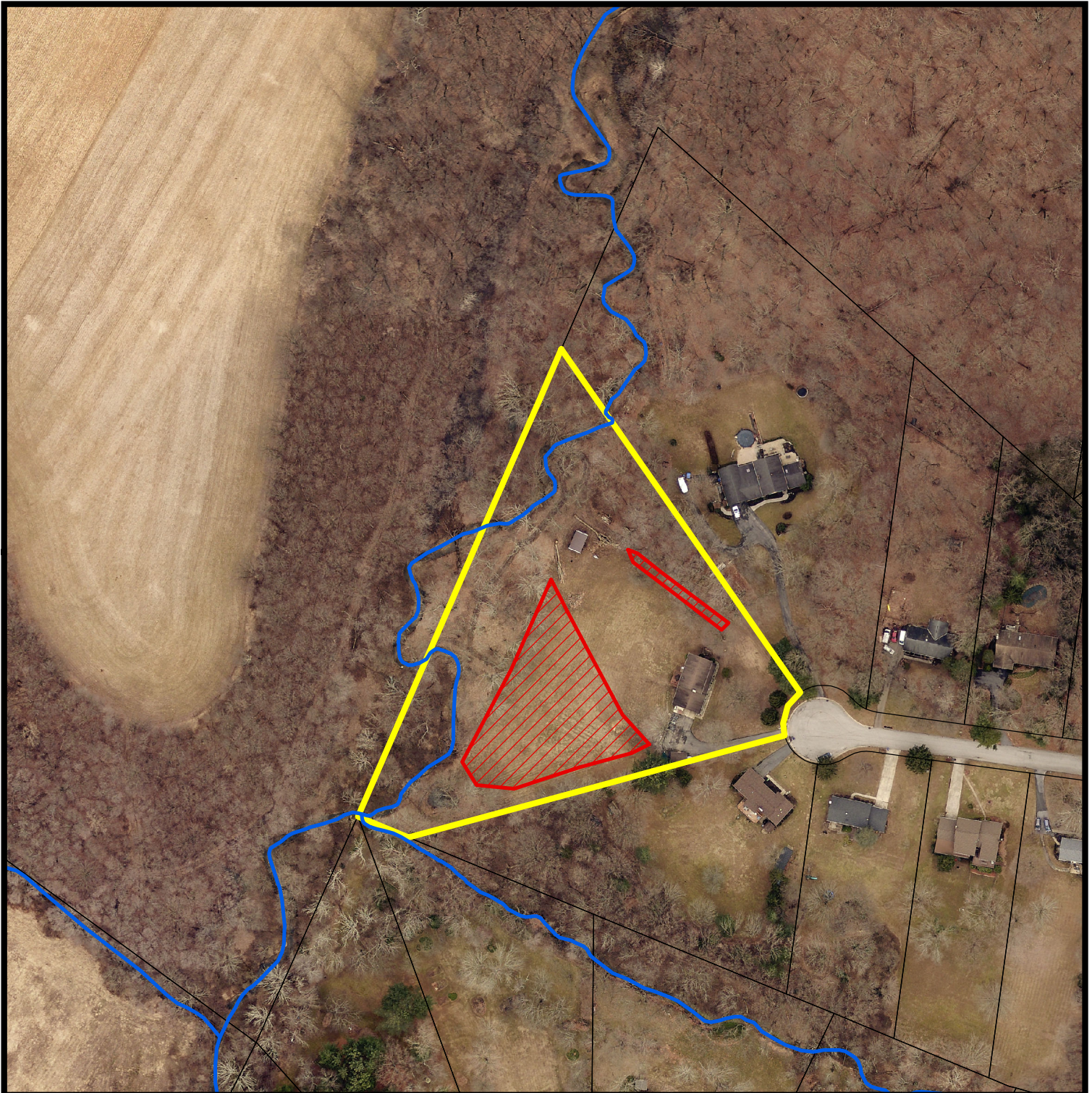
This map is for planning purposes only.
This map is not a boundary survey

1 inch = 175 feet



Forest Stewardship Map
for
Chris Murk
County: Harford
Woodland Acres: 1-2
Scale: 1:2,100
Prepared by: A. Amoruso
Date: 10/15/2020





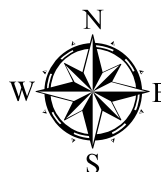
Legend

-  Property Boundary  Planting Boundary
 Hydrology Lines

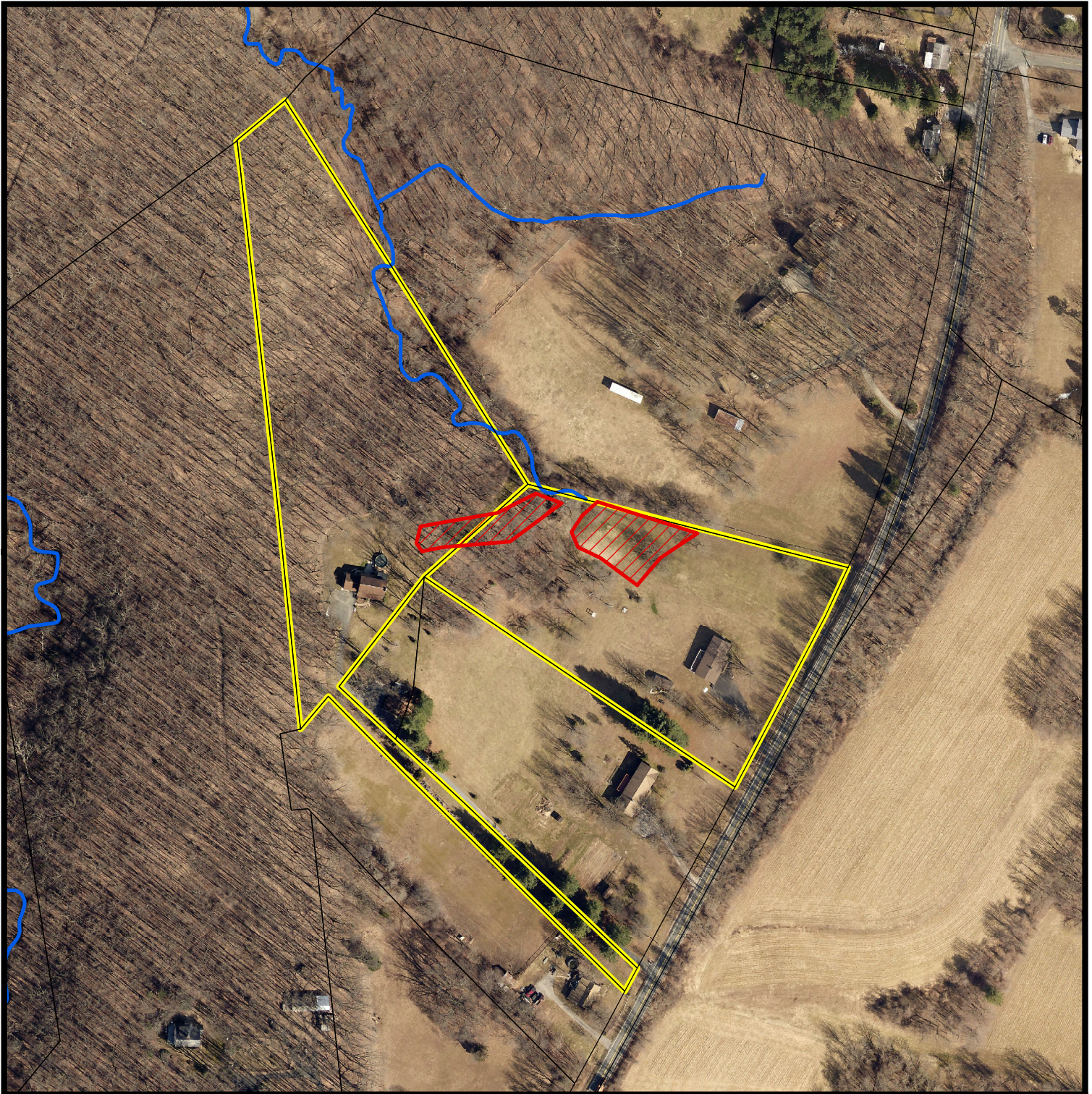
0 55 110 220 330 440 Feet

This map is for planning purposes only.
This map is not a boundary survey




1 inch = 175 feet



Forest Stewardship Map
for
Anthony Pecoriello
County: Harford
Woodland Acres: 1.5
Scale: 1:2,100
Prepared by: A. Amoruso
Date: 10/11/2020



Legend

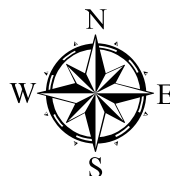
-  Property Boundary
-  Hydrology Lines
-  Planting Boundary

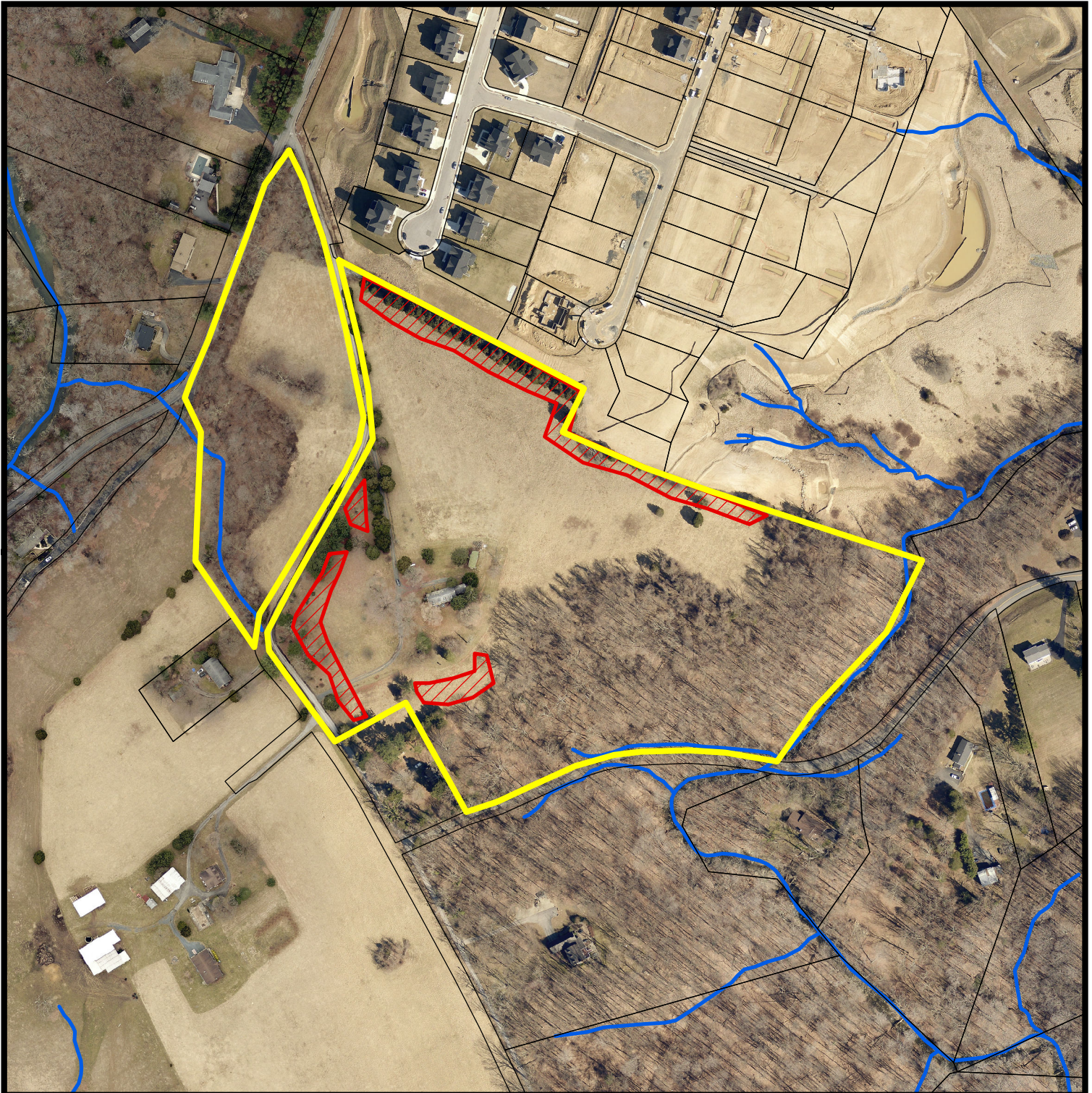
1 inch = 232 feet

Forest Stewardship Map
for
Gary and Christina Murk
County: Harford
Woodland Acres: 1.5
Scale: 1:2,785
Prepared by: A. Amoruso
Date: 9/24/2020




0 75 150 300 450 600 Feet

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This map is not a boundary survey





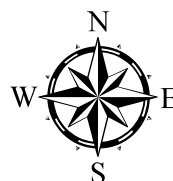
Legend

-  Property Boundary
-  Hydrology Lines
-  Planting Boundary

0 105 210 420 630 840 Feet

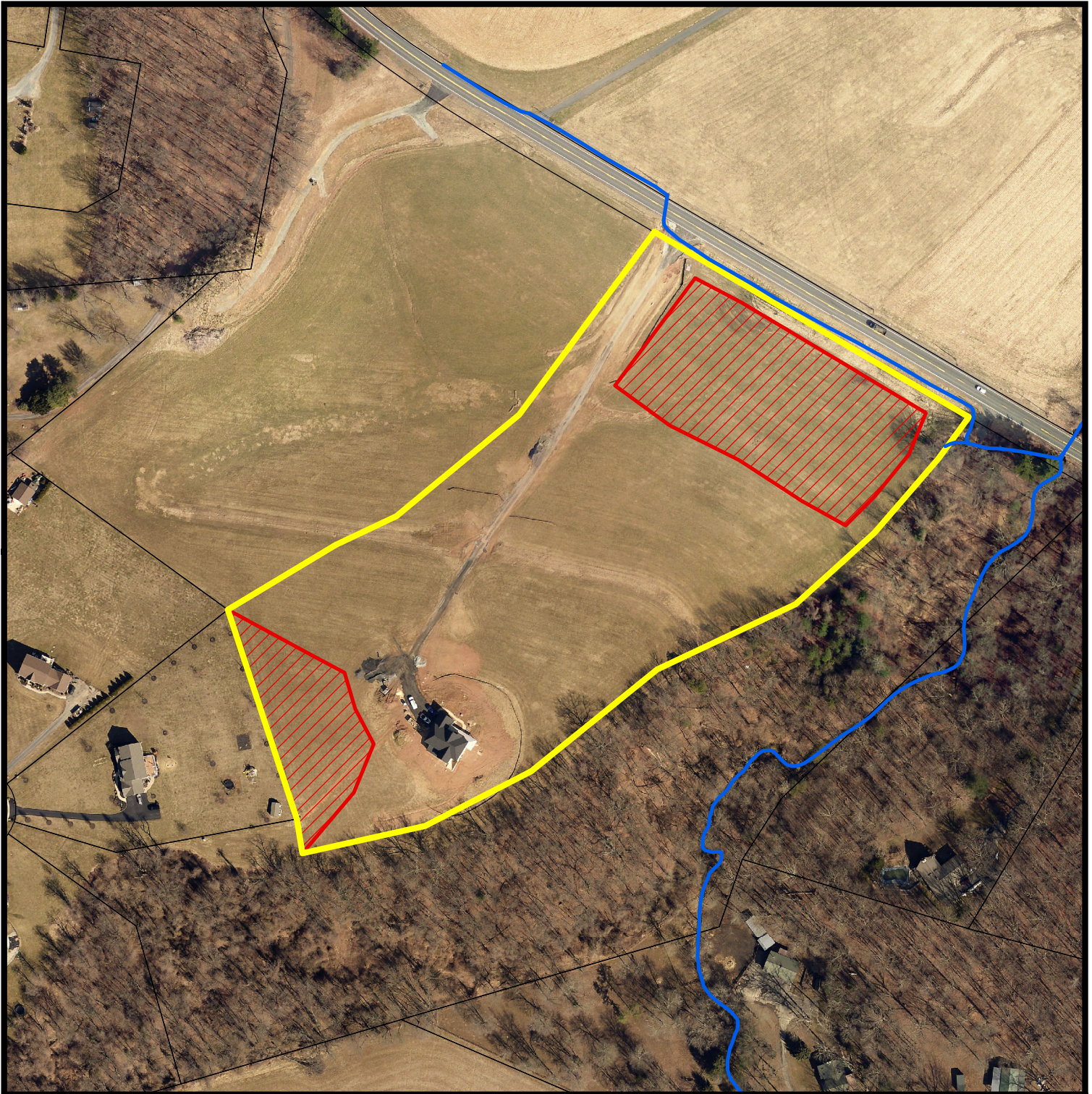
This map is for planning purposes only.
This map is not a boundary survey

1 inch = 314 feet



Forest Stewardship Map
for
Berthenia Crocker
County: Harford
Planting Acres: 2
Scale: 1:3,772
Prepared by: A. Amoruso
Date: 9/8/2020





Legend

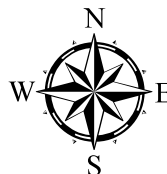
-  Property Boundary  Planting Boundary
 Hydrology Lines

0 70 140 280 420 560 Feet

This map is for planning purposes only.
This map is not a boundary survey

1 inch = 217 feet

Forest Stewardship Map
for
Eric Smith
County: Harford
Planting Acres: 3
Scale: 1:2,600
Prepared by: A. Amoruso
Date: 1/20/2021



Alliance for the Chesapeake Bay
Chesapeake Forest Fund
Tree Planting Plan

for

Bruce and Brenda Kinzinger
338 Quaker Bottom Road
Havre de Grace, MD 21078

443-910-3304

Location:

39.590897, -76.153658

3 acres

Prepared by:

Craig Highfield

1/22/2021



Landowner Objectives

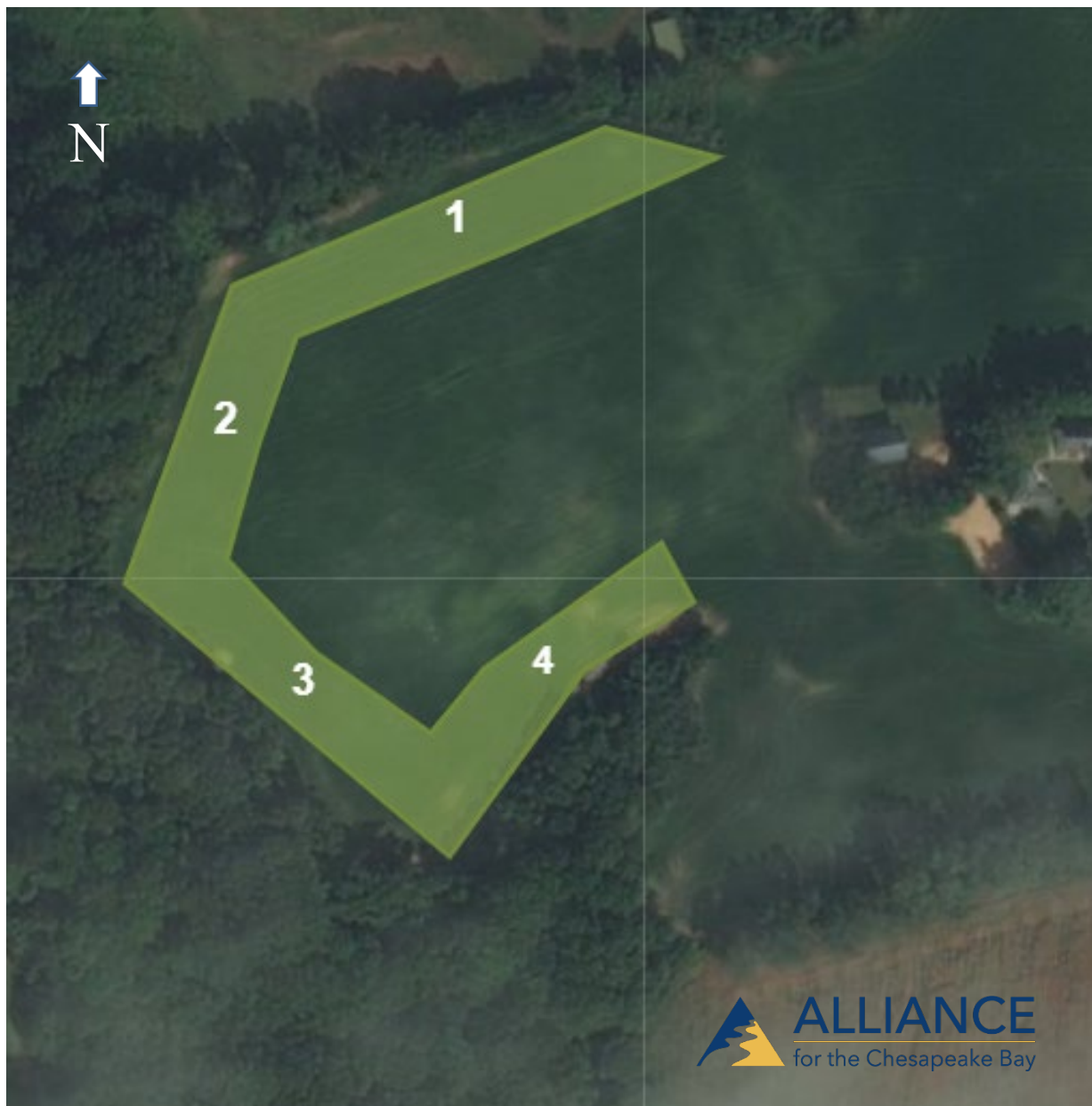
Landowner stated goal for the planting is to:

- (1) Convert selected agricultural fields into forests of native trees and shrubs
- (2) Establish pollinator habitat for landowners' bee hives

Property Description: Agriculture fields with steep gradients used for row crops

Planting Site Description

The planting site is a total of 3 acres on steep hills on one agricultural field. The has been in grain crop production for decades.



Soil Description

GcD3—Glenelg loam, 15 to 25 percent slopes, severely eroded

GcC—Glenelg loam, 8 to 15 percent slopes – Farmland of statewide importance

GcD—Glenelg loam, 15 to 25 percent slopes

MfE—Manor soils, 25 to 45 percent slopes



Planting Recommendations

Planting Method:

Hand planting is most appropriate for this project

Materials:

The contractor will provide 900 tree seedlings, 5' **Vigilis Sure Green** shelters with re-closable zip ties, 5', 1" x 1" white oak stakes and bird nets (for shelters).

Species: It is understood that species list may change depending on availability. Contractor will coordinate any change in species with Alliance staff.

Species		# Seedlings
White oak	<i>Quercus alba</i>	125
Black locust	<i>Robinia psuedoacacia</i>	100
Black cherry	<i>Prunus serotina</i>	75
Tulip poplar	<i>Liriodendron tulipifera</i>	75
Sycamore	<i>Plantanus occidentalis</i>	100
Red maple	<i>Acer rubrum</i>	75
Persimmon	<i>Diospyros virginiana</i>	75
American Hazelnut	<i>Corylus americana</i>	50
Serviceberry	<i>Amelanchier canadensis</i>	50
American plum	<i>Prunus americana</i>	50
Hackberry	<i>Celtis occidentalis</i>	25
Pawpaw	<i>Asimina triloba</i>	50
Eastern white pine	<i>Pinus strobus</i>	25
Pitch pine	<i>Pinus rigida</i>	25
Total		900

Site Preparation:

Landowner will prepare the site

Planting Instructions:

The seedlings should be planted in late winter or early spring of 2021 when trees are dormant but the ground is not frozen. The contractor shall scalp away turf at 5" X 5" at each tree seedling planting location.

All seedlings should be planted at 12' X 12' spacing with the approximate number of seedlings equaling 300 per acre or 900 total for 3 acres. Plant perimeter rows at 20' from edge of existing forest. Seedling species should be planted randomly and along the contours of the terrain.

Five-foot Tubex or Vigilis tree shelters should be installed around all trees and buried 2" into the soil to discourage deer and vole browse. Tree shelters should be installed with 1" x 1" x 5' white oak stakes at least 8" depth and connected by 2 quick-release zip ties. The shelters should have bird nets installed to prevent potential entrapment associated with the shelters by deterring the bird from possibly nesting within the tube.

Maintenance Instructions:

Control of competing vegetation will be carried out at three times annually during this 36-month maintenance agreement. Post planting maintenance is included in **Management Practice Schedule** below and is the responsibility of the contractor for 3 growing seasons ending in the Fall of 2023.

To reduce competition for resources with the newly planted trees, the site should be mowed and the proper glyphosate herbicide should be applied along a **3' diameter** (or band spray) around each tree at concentration recommended by the manufacturer for foliar application on grasses, forbs and woody vines. Herbicide should be applied two times during the growing season in the months recommended below.

Shelters and stakes should be maintained throughout the period, which includes straightening, stabilizing and replacing broken stakes. Shelters can be left on trees beyond crown emergence to prevent potential damage and mortality from buck rub. All nets should be removed as tree crowns emerge.

Management Practice Schedule - Performed on 3-acre planting site

Completion Date	Practice
Late winter/early spring 2021	Plant trees and install shelters with netting
Mid - May 2021 – 2023	Mow between the rows Spot treat three-foot diameter or band spray around tree with glyphosate Maintain and straighten shelters and stakes on surviving trees. Remove nets on shelters where trees emerge
July 2021 - 2023	Mow between the rows Remove nets on shelters where trees emerge
Early September 2021 – 2023	Mow between the rows Spot treat three-foot diameter or band spray around tree with glyphosate Maintain and straighten shelters and stakes on surviving trees Remove nets on shelters where trees emerge

Craig Highfield, Alliance for the Chesapeake Bay
chighfield@allianceforthebay.org; 410-507-6831

Harford County, MD Department of Public Works
Watershed Protection and Restoration
Watershed Restoration Status (MS4 Permit 11-DP-3310)



Barry Glassman
County Executive

Under construction as of 12/30/2021

Total 792.6

Active Projects

Project	Restoration Type	Complete (FY)	Credits (IA)
Stillmeadow	Stream Restoration	2022	36.7
Heavenly	Wetland Creation, Stream Restoration	2022	31.4
Fallston Library	SWM Retrofit	2022	1.5
C Milton Wright High	Stream Restoration	2022	75.2
Fallston Firehouse	SWM Retrofit	UKN	2.6
175 (Hickory Vet)	SWM Retrofit - Submerged Gravel Wetland	2023	1.5
31 (Cmart - Gavigans)	SWM Retrofit - Bioretention	2023	1.7
191 (Spenceola)	SWM Retrofit - Sandfilter	2023	7.3
Sunnyview	Stream Restoration	2023	95.1

Church Creek Elementary	Submerged Gravel Wetland, Stream Restoration	2023	47.7
Jarrettsville Elementary	Submerged Gravel Wetland	2023	3.3
Rose Property (Joint SCD)	Stream Restoration	2023	44.0
Northwest Branch Declaration Run	RSC, Stream Restoration	2023	69.4
Watervale	Stream Restoration	2024	70
Watervale	SWM - Bioretention	2024	0.8
Woodland	Stream Restoration	2024	33.6
Fallston MS, Fallston HS	Tree Planting, Bioretention, Stream Restoration	2025	270.8

Harford County, MD Department of Public Works
Watershed Protection and Restoration
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Barry Glassman
County Executive

Complete Projects

Updated Credits since last FY202 Annual Report
Inspections completed - FY2021
Inspection overdue - FY2021
Inspections due - FY2022
Repairs needed

1052.81	Total
1022.24	Pass
-30.57	Fail

* Credits updated, see Annual Report for discussion

Project ID	Project Name	Complete (FY)	Credits (IA)	Pass / Fail	Last Inspection
WP000085	Magnolia Middle (aka Emmord)	2021	58.5	Pass	11/12/2021
WP000105	Mariner Point Tree Planting	2020	0.29	Pass	5/21/2020
WP000104	Courthouse Bioretention	2020	0.48	Pass	5/13/2020
WP000039	Plumtree Run at Barrington Stream Restoration*	2020	82.97	Pass	5/20/2020
WP000039	Plumtree Run at Barrington SWM Retrofits (5)*	2020	9.81	Pass	5/20/2020
WP000033	Willoughby Beach Stream Restoration*	2020	151.52	Pass	5/27/2020
WP000033	Willoughby Beach SWM Retrofits (3)*	2020	12.07	Pass	5/27/2020

WP000086	Annie's Playground Stream Restoration	2020	97.74	Pass	11/4/2020
WP000086	Annie's Playground Tree Planting	2020	1.14	Pass	10/26/2020
WP000087	Tributary to Plumtree Run at Wakefield Manor Stream Restoration	2020	8.58	Pass	12/16/2019
WP000088	Stormwater Retrofit at Homestead Elementary	2019	1.57	Pass	7/10/2019
WP000029	Bynum at St. Andrews Way Stream Restoration	2019	92.52	Pass	4/24/2019
WP000027	Lower Wheel Creek Stream Restoration	2018	116.1	Pass	8/7/2020
WP000027	Lower Wheel Creek Stream Restoration	2018	15	Fail	8/7/2020
WP000027	Lower Wheel Creek SWM Retrofits (4)	2018	8.42	Pass	4/3/2020
WP000046	Leight Center Parking Lot Green Infrastructure	2018	0.41	Pass	2/2/2021
WP000070	Abingdon Library Tree Planting	2018	0.52	Pass	11/23/2020
WP000070	Abingdon Library Retrofit (1)	2018	0.18	Pass	12/21/2018
WP000070	Abingdon Library Retrofit (1)	2018	3	Fail	2/19/2019
WP000074	Bear Cabin Branch Wetland and Stream Restoration	2018	110.25	Pass	5/9/2018
WP000035	Ring Factory Stream Restoration	2018	32.49	Pass	7/27/2018
WP000035	Ring Factory ES SWM Retrofits (2)	2018	8.84	Pass	10/29/2019
WP000025	Wheel Creek at Country Walk 1B SWM Retrofit	2017	3.66	Pass	11/27/2019
WP000036	Foster Branch at Dembytown Stream Restoration	2017	42.10	Pass	10/3/2018
WP000024	Wheel Creek at Country Walk 1A SWM Retrofit	2016	8.66	Fail	3/23/2021
WP000026	Wheel Creek at Festival at Bel Air SWM Retrofit	2016	12.00	Pass	5/27/2021
WP000095	Willoughby Beach Road Tree Planting	2016	0.50	Pass	11/23/2020

WP000096	Trappe Church Road Tree Planting	2016	0.26	Pass	11/23/2020
WP000096	Trappe Church Road Tree Planting	2016	0	Remove	N/A
WP000073	Hickory Elementary Retrofit	2016	0.75	Pass	8/12/2019
WP000031	Norrisville Elementary Bioretention	2015	0.63	Pass	3/3/2020
WP000020	Woodbridge Stream Restoration	2015	24.6	Pass	4/5/2018
WP000051	Amoss Mill Road Tree Planting II	2015	0.21	Pass	11/23/2020
WP000052	Edwards Lane Tree Planting II	2015	1.71	Fail	11/9/2020
WP000055	Patterson Mill High School Tree Planting II	2015	1.2	Fail	11/3/2020
WP000063	Rider Lane Tree Planting	2015	0.63	Pass	11/9/2020
WP000064	Oakmont Road Tree Planting	2015	0	Remove	N/A
WP000093	Red Pump Elementary School Tree Planting II	2015	0.23	Pass	11/3/2020
WP000093	Red Pump Elementary School Tree Planting II	2015	0.35	Fail	11/3/2020
WP000094	Magnolia Middle School Tree Planting II	2015	0.47	Pass	10/26/2020
WP000060	Edwards Lane Tree Planting	2015	0.98	Pass	11/9/2020
WP000061	Amoss Mill Road Tree Planting	2015	0.18	Pass	11/23/2020
WP000062	Harford Christian School Tree Planting	2015	0.50	Fail	11/23/2020
WP000032	Foster Branch at Trimble Road Stream Restoration	2014	24.26	Pass	11/11/2019
WP000054	Mt Soma Property Tree Planting	2014	1.04	Pass	12/3/2020
WP000056	Magnolia Middle School Tree Planting	2014	0.23	Pass	10/26/2020
WP000058	North Harford High School Tree Planting	2014	0.15	Fail	11/3/2020

WP000059	Perryman Wellfield Tree Planting	2014	1.81	Pass	11/9/2020
WP000019	Woodbridge Center Ph 3 SWM Retrofit	2014	3.80	Pass	12/3/2020
WP000048	Heaven Waters Boulton Street Tree Planting	2014	0.22	Pass	10/28/2020
WP000049	Churchville Recreation Complex Tree Planting	2014	0.32	Pass	10/28/2020
WP000050	Walters Mill Tree Planting	2014	1.03	Pass	10/28/2020
WP000053	Harford Center Tree Planting	2014	0.27	Pass	10/28/2020
WP000022	Wheel Creek at Gardens of Bel Air SWM Retrofit	2014	4.79	Pass	12/21/2018
WP000030	Wheel Creek at Calvert Walks Stream Restoration	2013	21.75	Pass	11/6/2019
WP000057	Patterson Mill High School Tree Planting	2013	0.80	Pass	11/3/2020
WP000068	Cedarwood Pump Station Demolition	2013	0.05	N/A	N/A
WP000018	Friends Pond SWM Retrofit	2012	11.70	Pass	6/6/2018
WP000012	Bynum Ridge Stream Stabilization	2012	13.95	Pass	11/6/2019
WP000016	Forest Hill Elementary School Bioretention (2)	2011	0.91	Pass	12/1/2020
WP000017	Hickory Elementary School Bioretention	2011	0.60	Pass	8/12/2019
WP000013	Plumtree Run at Tollgate Stream Restoration	2011	50.40	Pass	11/6/2019
WP000042	Washington Court Demolition	2011	2.11	N/A	N/A
WP000015	Abingdon Library Bioretention	2011	0.60	Pass	12/21/2018

Harford County, MD Department of Public Works
Watershed Protection and Restoration
Watershed Restoration Status (MS4 Permit 11-DP-3310)



Barry Glassman
County Executive

Complete Projects (pre-2009)

Inspections completed - FY2021	176.68	Total
Inspections due - FY2022	121.38	Pass
Repairs needed	55.30	Fail

Project ID	Project Name	Complete (FY)	Credits (IA)	Pass / Fail	Last Inspection
WP000040	Pumphrey Property Demolition	2010	0.51	N/A	N/A
WP000003	Laurel Valley Stream Restoration	2009	40.2	Pass	11/11/2019
WP000065	Gilley Property Demolition	2008	0.43	N/A	N/A
WP000002	Laurel Valley SWM Retrofit ¹	2005	19.74	Fail	6/22/2021
WP000001	Laurel Valley Bioretention	2005	1.27	Pass	12/21/2018
WP000007	Harford Center Water Quality Improvements ³	2005	0.94	Pass	10/2/2020
WP000009	Winters Run at Route 7 Stream Restoration	2004	43.5	Pass	11/11/2019
WP000004	Box Hill South Tributary Stream Restoration	2004	24.3	Pass	11/11/2019
WP000066	Logana Property Demolition	2002	0.46	N/A	N/A
WP000067	Leyko Property Demolition	2002	0.43	N/A	N/A
WP000006	Mt Royal Project SWM Facility ²	2002	35.56	Fail	7/25/2017
WP000011	Foster Branch Tributary at Haverhill Stream Restoration	2004	9.34	Pass	11/11/2019

¹ HOA maintained, needed repaired not related to retrofit

² Dredging pending

Harford County, MD Department of Public Works
Watershed Protection and Restoration
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Barry Glassman
County Executive

Baseline = 10,929 MDE approved (June 2020)

	Thru FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	Total
Septic Pump Out	157.4	155.3	149.1	150.9	149.2	135.5	95.7	126.8
Connections to WWTP	17.6	3.5	3.1	3.5	2.3	5.1	3.5	38.6
Septic BAT Installation	25.2	17.9	10.7	4.7	4.7	0.0	0.0	63.2
Restoration	172.5	22.2	45.8	295.2	94.1	364.6	58.5	1052.8
Total	372.7	198.9	208.6	454.3	250.3	505.2	157.7	1,281.4

Note: All values are impervious acres calculated using methods outlines in the "Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated", MDE 2014

Note: Septic Pump Out is average for FY2019 through FY2021

Complete = 11.7% 1,281.4

Target = 20% 2,185.7

Balance = 8.3% 904.3